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► The *Bounty* and Pitcairn Island

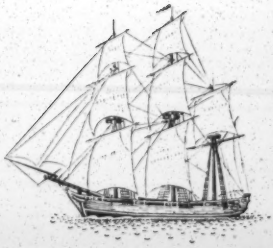
► Wild Animal Speedsters

► İstanbul

► Sponges—An Undersea Drama

Encrusted bones of the ill-fated *Bounty* impress descendants of Fletcher Christian, who seized the vessel, sank her, and set up a secret colony on lonely Pitcairn Island. Today's young Fletcher Christian and Fred Christian study hull fittings, rudder pintle, oarlock, and sheathing nails, wrested from the bottom by the *National Geographic's* Luis Marden.

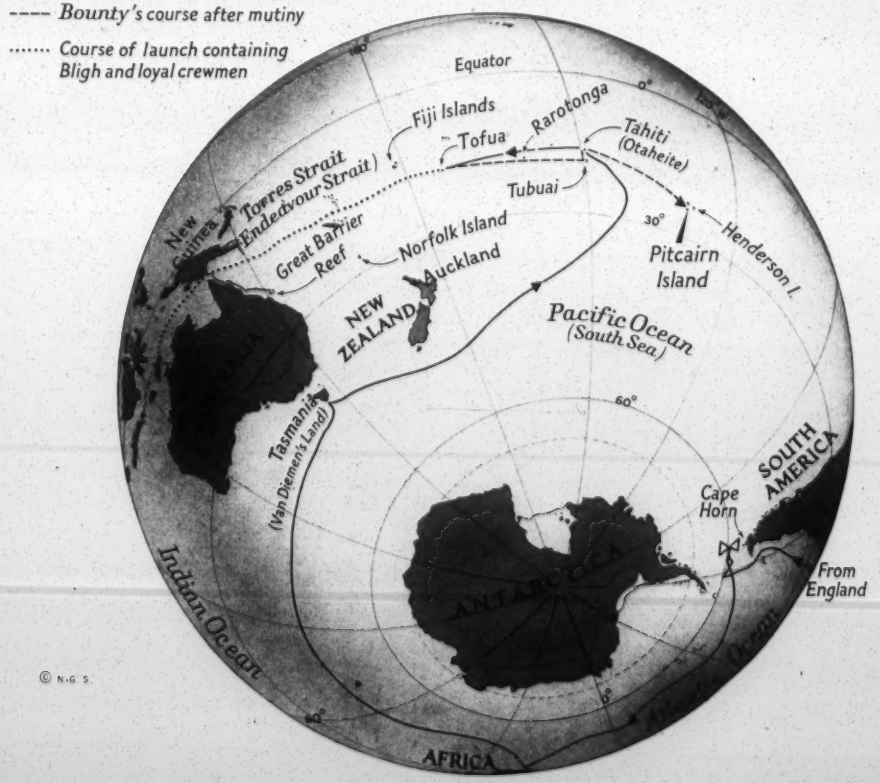
LUIS MARDEN, NGS STAFF



Bligh, cast him and 18 others adrift in an open launch, and returned to Tahiti. Christian was uneasy in this "paradise." He sought a more isolated retreat, so set sail again—eastward into apparent oblivion. Eight mutineers stayed with Christian, along with six native men from Tahiti and Tubuai, 12 Tahitian women, and a little girl.

The party found what they sought at little-known, uninhabited Pitcairn. It fulfilled Christian's wish for a distant sanctuary from British Admiralty vengeance. On January 23, 1790, his mutineers stripped the *Bounty* and burned it in Bounty Bay, cleaving themselves from England. Not until the ship *Topaz* of Boston touched Pitcairn in 1808 was the hideout, 1,300 miles southeast of Tahiti, discovered. The lonely rock, two miles long and about a mile wide, then harbored but one of the original Englishmen. He held a patriarchal discipline over the community. The *Bounty* was but a memory, its skeleton lying somewhere below the incessantly pounding Pitcairn waves.

Pitcairn Islanders still bear the names of Bountymen descendants—55 are surnamed Christian among the 153 proud, independent souls. A tall broad-shouldered one greeted Mr. Marden. "Welcome to Peet-kern." He was Parkin Christian, 73-year-old great-great grandson of Fletcher Christian. Then followed words in Pitcairnese. One had "heardsay" that Mr. Marden would dive for the *Bounty*. "Man, you gwen be dead as a hatchet," he predicted. Knowing the



Luis Marden, *National Geographic* writer and photographer, achieved one of the day's truly adventurous exploits when he dived into South Pacific waters to discover the final resting place of H.M.S. *Bounty*. The December, 1957, issue of The Magazine carries the complete, exciting, color-illustrated story, recounted here for School Bulletins readers.

THOMAS CHRISTIAN

Pitcairn Riddle Solved

THIRTY feet deep in Bounty Bay off Pitcairn Island the free diver stared through his goggle, hoping . . . but could it really be? Each calm day for weeks he had dived, searching the bottom inch by inch. Now, unexpectedly, loomed a long sandy trench, covered with white limestone and algae. The diver swam nearer, staring at curious markings resembling petrified worms.

Then his heart jumped. These were dozens of encrusted sheathing nails of His Majesty's Armed Vessel *Bounty*. They marked the line of the sea-ruined keel. Deeper lay an oarlock, hull fittings, and fragments of the ship's copper sheathing. The diver had found the sea grave of the *Bounty's* bones, unlocked a 167-year-old mystery, and erected a milestone of exploration. To Luis Marden, veteran diver, writer-photographer of the National Geographic Society, came a "bravo" from around the world.

Before Marden's discovery no one knew exactly where *Bounty* lay. Her story lives as one of the sea's strangest. She sailed from Spithead, England, in December of 1787 for Tahiti to gather breadfruit for transplanting in the West Indies as food for slaves. After six months at the "finest island in the world," *Bounty* left for Endeavour Strait (see map). But off Tofua, mutineers, masterminded by Acting Mate Fletcher Christian, overpowered ship commander Lt. William

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PHOTOGRAPHS BY LUIS MARDEN, NATIONAL GEOGRAPHIC STAFF

At three clangs of a bell, island males between 16 and 60 report for any duty declared by the council—repairs to the boat landing slide, road work, or land clearing. Meanwhile the wireless operator turns to twice daily, listening for ships' calls. He keeps regular communication with Rarotonga, 1,900 miles distant.

Life is geared to the excitement of ship arrivals. Sixty hove up last year, staying usually an hour. One of them was Irving Johnson's globe-circling yacht *Yankee* whose voyages have long thrilled *Geographic* readers. One of her crewmen spotted *Bounty's* anchor in 50 feet of water outside Bounty Bay. *Yankee's* winches—and Johnson's seamanship—salvaged the encrusted iron monster (left).

When ships call, islanders shoulder loads of coconuts, pineapples, oranges, bananas, up dangling Jacob's ladders. When trading has been especially good, the religious Pitcairners take their leave with a lusty rendering of "God Be with You Till We Meet Again." Some of their earnings finds its way to United States mail-order houses for clothing, furnishings, and tools.

Pitcairn children learn their three R's under teacher Allen Wotherspoon, out from New Zealand. Oldsters join him at a men's and ladies' club, open to unbridled discussion. Someone mentions goats—a sore point on Pitcairn. Mutineers probably introduced the originals. Now a five-foot-high fence confines some 400. Argue the anti-goat faction, "They nuisances, do lots of damage." Reply adherents: "If war come, ships cut right off, and we'll go stranded with no meat."

"Pitcairn lies about half way between Auckland and Panama, which are 6,500 miles apart, but it is almost 400 miles north of the shortest route between the two," Mr. Marden writes in the December issue of the *National Geographic Magazine*. "Thus islanders live in apprehension of a change of route that would deprive them of their chief contact with the outside world and their principal source of private revenue."

Luis Marden could sense Pitcairn's isolation as he sailed away. For the Pacific soon fills all the horizon except for "a slate-colored smudge against the bright gold of the westering sun," forever like a slumbering lion afloat upon the sea.—

PHOTOGRAPHS BY LUIS MARDEN, NATIONAL GEOGRAPHIC STAFF

violence of seas breaking against the volcanic slopes, he spoke with concern and authority. Since passing ships are their only links with the world, Pitcairners rank as the finest surf boatmen afloat.

The island's top is an undulating savanna, splotched with gray-trunked pandanus trees, and dark-green rose apple thickets, the latter introduced from Norfolk Island over a half century ago. During moments away from the *Bounty* search, Mr. Marden added many engaging place names to his knowledge of geography—"Where Freddie Fall," "John Catch a Cow," "Headache," "Where Dan Fall," and "Oh Dear." How came the latter? "Well," Mr. Marden was informed, "native man wading 'long shore there, drop his *malu* (from Tahitian *maro*, loincloth) in water. You know that's all they wear, and he look down and say 'Oh dear!'"

The random houses of Adamstown are Pitcairn's sole settlement. Courthouse, church, and post office are major buildings. Stamps form the government's only revenue, but bring sizable sums from collectors—thanks to Pitcairn's *Bounty* fame.

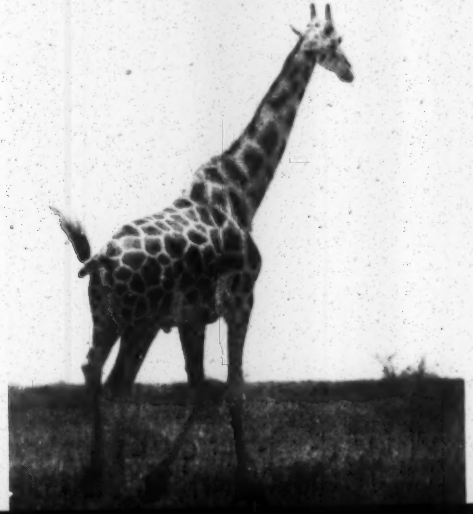
PITCAIRNERS train from the age of 14 to row, sail, and steer longboats through the breakers of Bounty Bay

head and rocks along like an earth-shaking locomotive at a lumbering 28. The rhino can keep horn-and-neck with a horse (not Swaps or Citation) for two miles, according to reports.

As for man, the best he can do is about 22 miles an hour for the 100-yard dash. Derek Ibbotson, world's record holder for the mile, ran the course in three minutes, 57.2 seconds. That's a little more than 15 miles an hour.

Yet men aren't the slowest of all. Booby prize in the animal sweepstakes goes to the sloth. Under extreme pressure, and by straining every muscle, he can hit as much as one mile an hour.—

F. T. MURRAY



J. B. SHACKELFORD

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CAPTAIN M. L. ASHTON

Nature's Racing Whiz-Kids

Four-legged Speedsters Leave Top Human Athletes Eating Dust

CHARLES J. BELDEN

MOVE over, Olympic track stars. Make room for some real runners. The cheetah at far left, for example, has earned the right to wear a cocky grin. The world champion sprint star, he can hit 45 miles an hour in two seconds, reach a blistering 70 a moment later.

But the cheetah tires quickly. The American pronghorn antelope (left) has been clocked at better than a mile a minute—and can keep up the pace long enough to make him a middle distance medal winner. Admirers call the pronghorn the world's fastest hoofed animal.

On the steppes of Mongolia another team of distance runners takes a morning workout, above, right. These wild asses breeze along at an estimated 45 miles an hour—about the speed Swaps, record-holding thoroughbred, maintained over a mile course.

Jack rabbits can hit the same speed. Foxes and coyotes settle down to 35 miles an hour and hold it long after fast-starting lions and leopards are fagged out.

Some awkward-looking animals reach surprising speeds. The ungainly giraffe (right) eats up the miles with a long-legged 32-mile-an-hour canter. The rhinoceros, far right, lowers his

ranean, and thence to world ports. Some call İstanbul the world's best located metropolis. Ancients dubbed it the "Hub of the Universe;" Russians the "City of Kings;" today's Turks call it the "Magic City."

Understandably, Constantinople, as it was known for 1,600 years, was often coveted and besieged. Europe was appalled when this leading citadel of Christendom succumbed to Islam and was swallowed by the enlarging Ottoman Empire in 1453. Now the free world embraces it along with all Turkey as a bulwark of the West in a tense region overshadowed by the huge land mass of Russia.

İstanbul is a city of many cities. Stamboul, its oldest part, hugs a triangle of land segregated by walls and water. Galata stands across the Golden Horn, a commercial center of banks, stores, and office buildings. Foreigners dominate Pera, north of Galata. Much of İstanbul lies in Asia beyond the Bosporus.

Older sections of İstanbul rear domes and minarets, rich palaces shadowing narrow streets, bazaars. Galata Bridge, below, teems with trolleys, buses, automobiles, and pedestrians, reflecting modern everyday life in İstanbul. The city's older side, centuries in the making and mellowing, will wear through the present face lifting. Classic landmarks will remain unchanged. Among them is the magnificent Byzantine Church of the Holy Wisdom, used as a place of worship for 14 centuries. It has withstood earthquakes and the decline of empires, has served longer than almost any other of Christianity's great edifices. In 1934, the building was turned into a museum, housing glories of Byzantine art.

Robert College and its sister school, the American College for Girls, stand near İstanbul, an enduring link between East and West. Product of American educators in Turkey, Robert turns out many of the country's engineers. Turkish women gain leaders from among American College alumnae. The story of these schools appears in the September, 1957, *National Geographic Magazine.*

GALATA BRIDGE spans the Golden Horn, linking age-old city sections of İstanbul

PHOTOGRAPHS © EMIL BRUNNER

New Look for Istanbul

THE SCENE above shows old Istanbul spreading beside the Bosporus, its minarets stabbing skyward. But below them, dilapidated sections become rubble. Bulldozers snort among them, their exhausts merging with the cries of the muezzin calling the faithful, the haggle of bazaar merchants. Istanbul undergoes an enormous alteration into a 20th-century look.

Turks are delighted with the municipal house cleaning. Magically, cobblestone alleys will become spacious boulevards; modern buildings will sprout from medieval labyrinths of tiny shops. Slums and dank wharves along the Golden Horn will emerge as scenic drives. Maybe, say some Turks, there will be a subway under the Golden Horn. They thank a modern-minded government—and the mass-produced American automobile which outmoded the narrow streets and demanded the drastic change.

Istanbul's one million population long thought of change as something that inches along with the centuries. Their city is one of earth's oldest. Jason's Argonauts, according to Greek mythology, splashed up the Bosporus past Istanbul's site seeking the Golden Fleece. Before the Christian era, Greek adventurers established the city Byzantium, center of luxury, grandeur, and culture.

The city flourished on its location astride the slim Bosporus, separating the continents of Europe and Asia. The Black Sea's only outlet leads through the city, down the Bosporus, to the Sea of Marmara, the Dardanelles, the Mediter-

Posidon, Vaseliki, Venezelos, Kaliope, Democratia. Sponge-crew homes are rich with vases of gentle paper flowers, figurines, and the sound of stringed instruments. Sponges themselves are seldom out of sight or mind in this world's sponge capital. Sailors squat on decks, above, to clean and sort sponges for market. In offices near by men talk qualities, prices, and supplies.

Every boat carries a religious picture. Each dawn breaks on a prayer from the captain for his men. Crewmen's ages range from 16 to beyond 60. One man boasts 15 years of diving in the Mediterranean, 32 years at Tarpon Springs. Crews of diving boats often spend nine months of the year on the water. Divers spend about two months of the nine *under* water. Their eyes become adjusted to wavering twilight, their feet to feathery currents along the uneven sea floor. Like all Greeks they love laughter and fellow-voices; down here their world is silent. Thirty-five-pound shoes stir no sound. Fish of varying sizes stare curiously at the strange upper-world intruders. In good light conditions, the diver can see 30 to 50 feet ahead. He carries a net sack in one hand, a heavy pronged hook in the other. Maybe he plods long distances, finding nothing. Then the big moment—a sizable sponge.

He swings his hook, wresting the sponge off the rock it had settled on for life, dropping it silently into his sack. He clutches the top, safeguarding the prize. Again he plods along. Seaweed weaves dark patterns about him.

Perhaps at that moment a shark glides along, scenting blood. Divers say sharks can smell blood from the tiniest scratch on a hand. The lifesaving injunction rings in the diver's mind: *"In case of sharks, stand still!"*

He folds arms, hides his hands, and freezes until the shark departs. Then he

HERB DAVIES

DOWN TO WORK goes a Tarpon Springs sponge diver, equipped with net and hook. Ladder will be lowered to help him back on board when his net is full. Day's "pieces," cleaned of "gurry," and strung together like a giant necklace, festoon boat's rigging.

UMI

VICTOR DE PALMA FROM BLACK STAR

Sponge Diving

GREEK DRAMA IN THE GULF

WHEN this man and his colleagues stroll about Tarpon Springs, Florida, townsmen look up, admiringly. He's a sponge diver, top sea dog among the ship crews that annually harvest some $2,500,000 in sponges from deep in the Gulf of Mexico. He's part of the Greek community that berths its fleet of brightly-painted boats with Hellenic names alongside the Tarpon Springs wharves. Sit with him an hour in his favored coffeehouse. Maybe he'll break out with a tale of the undersea, of sharks, danger—and of that sponge you take for granted when you wash the kitchen windows.

He doesn't know who found the first Gulf sponge. But late in the 1800's, sponge fishing centered about Key West. It moved northward to Tarpon Springs with the new century, just as Mediterranean sponges were growing rarer and more costly. Sponge divers were needed. They came from the Greek islands of Aíyina, Khálki, Kálimnos, and Símí. They trooped into Tarpon Springs with families, diving suits, diving-boat plans, centuries-old prayers, customs, a love of color, and one supreme belief—that a diver for two years is a diver for life. The Gulf port afforded many lifetimes of sponge fishing. Along Florida's west coast, out to fifty miles offshore, spread more than 9,000 square miles of sponge-growing sea bottom awaiting harvest.

The wharves at Tarpon Springs have a look of the Aegean Sea. Color flares in rows of sponge boats—orange and black; all blue; a combination of white, blue, red, and black. Open decks and high-curved bows recall the galley of Ulysses. Greek names bob on the transoms—*Christai Lo,*

VICTOR DE PALMA FROM BLACK STAR

HERB DAVIES

Florida Sponges

tugs the lifeline—signal for coming up.

Often temperamental as chefs, some sponge divers reach the surface sputtering criticisms—"Why didn't you do this? What was the matter about that?" Fellow crewmen shrug it off. "We don't mind. We know his work is dangerous, exacting," they say. Divers themselves quickly laugh it off and return to the routine of three to six descents a day for a few minutes, a half hour, or longer. A crew counts a good day with a catch of 150 to 180 "pieces." Always, the diver counts hunger among his difficulties. They take no food or water until work's end when they cry, "Now, boy, can I eat!"

The object of all this dedicated work is nothing more than the skeleton of a sea animal. A sponge starts life as a larva swimming in ocean depths. It may hitch itself to the sea floor, or a rock, developing into an animal without blood, heartbeat, or sense organs. Water is sucked into its pores. Tiny sea life is absorbed for nourishment.

Gathered since the start of recorded history, sponges have served man in dozens of ways. When the sponge harvesters hit Tarpon Springs, they brought unique economic importance to the town. Development of synthetic sponges has heightened interest in natural sponges. The latter still have wide industrial uses—in cleaning lithographic plates, smoothing pottery molds, and as a tool for the house painter.

Tarpon Springs thrives under the impetus of its Greek sponge crews. Visitors flock to see its St. Nicholas Orthodox Cathedral, named for the patron saint of ships and seafarers. Two weeks ago, Epiphany attracted crowds to watch Tarpon Springs youths dive for their archbishop's cross. The lad who retrieves the golden cross, flung into the bayou, may kiss it (right) and receive a blessing and a promise of happiness.—S.H.

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